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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/582,193	05/09/2007	William C. Bushong	27860-31	3908

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EXAMINER
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YANCHUK, STEPHEN J

ART UNIT	PAPER NUMBER
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1795

NOTIFICATION DATE	DELIVERY MODE
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07/16/2010

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

USpatents@armstrongteasdale.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/582,193	<b>Applicant(s)</b> BUSHONG ET AL.	
	<b>Examiner</b> STEPHEN YANCHUK	<b>Art Unit</b> 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 26 April 2010.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) See Continuation Sheet is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4, 7, 8, 12-16, 19, 24, 27, 29-31, 38, 41, 42, 45-47, 49-52, 59, 64 and 164 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)                        | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

Continuation of Disposition of Claims: Claims pending in the application are 1,2,4,7,8,12-16,19,24,27,29-31,38,41,42,45-47,49-52,59,64 and 164.

### DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in prior office action.

#### ***Claim Rejections - 35 USC § 102 - 35 USC § 103***

1. Claims 1,2,4,7,8,12-16,19,24,27,29-31,38,41,42,46-47,49-52,59,64 and 164 are rejected under 35 U.S.C. 102(e)/103(a) as being anticipated or obviated by Yamaki et al (PGPUB 2004/0202933).

Claim 1, 2, 4, 7, 27, 29, 46-47, 29, 46-47, 48, 51: Yamaki teaches a lithium ion secondary battery having a high energy density based on the cathode material [Abstract]. The material is on the cathode. The battery of Figure 2 depicts a battery with an anode, cathode, and separator between [Figure 2]. The material on the cathode is taught to include MnO<sub>2</sub> and CuO along with other materials [Paragraph 73]. CuO acts meets the claim limitations of the “extender material” and MnO<sub>2</sub> satisfies the “Active material” limitations. A cell with an active material of MnO<sub>2</sub> and extender element of CuO inherently has the property of the extender having a discharge voltage lower than the initial discharge voltage of the primary active material. The capacity of the cells are found in Table 2.

Claim 8, 12-16, 41, 52, 56 : Yamaki teaches the cathode further comprising Lithium carbonate, lithium fluoride, chromium oxide, nickel oxide, cobalt oxide, iron oxide, aluminum hydroxide, and magnesium hydroxide [Paragraph 73]. The combination of these materials creates a material wherein the extender comprises the elements taught. The proportion of each are result effective variables to create a high

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energy density battery. The capacity of the extender is an inherent property and therefore since the materials combinations are taught by the prior art, the claim limitations are met.

It has not been claimed that the extender and the active material are not separate materials after formed on the cathode. As indicated by the specification, the materials do not necessarily need to be considered as separate once formed; IE not a bi-layer construction on the electrode.

Claim 19, 24, 59, 64: Capacity ratios and ratios are taught by the construction by the battery wherein the properties are result effective variables or inherent properties. The capacities are found in Table 2.

Claim 30, 31, 38: Yamaki teaches the anode comprising carbon incorporated with the anode construction [Paragraph 2, 23, 48, 50].

Claim 42: The material (12) is located between the case and the cathode [Figure 2].

Claim 164: Yamaki teaches a lithium ion secondary battery having a high energy density based on the cathode material [Abstract]. The material is on the cathode. The battery of Figure 2 depicts a battery with an anode, cathode, and separator between [Figure 2]. The material on the cathode is taught to include  $\text{MnO}_2$  and  $\text{CuO}$  along with other materials [Paragraph 73]. Yamaki teaches the cathode further comprising Lithium carbonate, lithium fluoride, chromium oxide, nickel oxide, cobalt oxide, iron oxide, aluminum hydroxide, and magnesium hydroxide [Paragraph 73]. The capacity is taught to be over .5Ah [Table 2].

Claim 45 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaki et al (PGPUB 2004/0202933) as applied to claim 1 above and further in view of Nanjundaswamy et al (PGPUB 2003/0211392)

Yamaki teaches a cathode material for a battery as taught above.

Claim 45 is rejected by the teaching that Lithium batteries have a higher voltage and higher energy density than alkaline batteries. It was established that Li/MnO<sub>2</sub> (Lithium) out preformed Zn/MnO<sub>2</sub> (Alkaline) batteries. Lithium cells are able to be used in higher voltage and higher power demanding equipment like cameras, which alkaline cells can not. The difference between Alkaline and Lithium batteries is the anode material, but they both comprise manganese dioxide as the cathode [Paragraph 3]. Therefore, it would have been obvious to one of ordinary skill in the art to have substituted the zinc anode for the lithium anode in the structure of the lithium battery described by Nanjudaswamy because it has been held that is obvious to substitute one known material for another known material each of which serves the same purpose. See MPEP 2144.06 II. A Zinc anode with the aforementioned cathode would give an alkaline battery that would meet the claimed structure. It would have been obvious for one of ordinary skill in the art to use Nanjundaswamy to modify Yamaki because Nanjundaswamy teaches a high density battery.

### ***Response to Arguments***

2. Applicant's arguments filed 4/26/2010 have been fully considered but they are not persuasive.

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3. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., Extender elements) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

The principle argument from the applicant is that Yamaki teaches a single phase particle active material which is different from the invention. The examiner agrees with this argument but does not find them persuasive since the arguments and the bounds of the claims do not coincide. The applicant has failed to give structure to the "active material" and "extender" which make them different particles or layers from each other.

4. The applicant has not claimed a two particle system wherein one active material particle is defined and a separate material particle is defined differently. The applicant states a cathode having two materials and does not provide the structural specificity argued on 4/26/2010. The prior art reads on the claims as written and further amending to define the structure as distinct particles would need to be added in order to be in line with the arguments.

5. The capacity was taught to be over the claimed limitation and therefore it is interpreted that the anode capacity is met by the prior art. The applicant is entitled to claim the structure how they see fit, but using measurements which are not typical in the prior art in order to achieve a patent is not a viable way to achieve a patent. The

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applicant is encouraged to define the anode by the structural properties that are novel to this invention such as the materials or morphologies that achieve novel discoveries.

6. Nanjundaswamy is used for the link between battery types and the teaching that active materials of one battery can be used in a different type of battery. The specific active materials of Nanjundaswamy are not being used.

### ***Conclusion***

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **STEPHEN YANCHUK** whose telephone number is (571)270-7343. The examiner can normally be reached on Monday through Thursday 8:30am to 5:00pm.



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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/STEPHEN YANCHUK/  
Examiner, Art Unit 1795

/PATRICK RYAN/  
Supervisory Patent Examiner, Art Unit 1795